

# CEREAL RUST BULLETIN

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- Wheat leaf rust is severe in Texas and Oklahoma, but light in the southeastern U.S.
- Stripe rust is severe on wheat in Texas and Arkansas.
- Barley stripe rust is severe in California and Washington.

Small grain harvest has begun in the southern U.S. In the Central Great Plains, the winter wheat crop is in good shape and ahead of normal maturity. Planting in the spring grain-growing area progressed rapidly with warm, dry weather over most of the area in late April and early May.

**Wheat stem rust.** During late April, wheat stem rust was severe on a few susceptible cultivars in central Texas plots and light in north central Texas plots. In southern Texas at Uvalde, stem rust was severe throughout the plots. Traces of wheat stem rust were observed in southern Louisiana plots. So far, no wheat stem rust has been found in wheat fields in the southern U.S. this year, which was also the situation at this time last year.

**Wheat leaf rust.** During the last week of April, wheat leaf rust severities in north central Texas and southern Oklahoma plots ranged from 0 to 80%. Severities were as high as 70% in fields where rust overwintered (Fig. 1). By early May, rust was increasing throughout the state of Oklahoma. The mild winter and rainfall in late March and early April contributed to the rust development in much of this area. This region provides leaf rust inoculum for wheat grown farther north.

During the first week in May in the southeastern U.S., 80% severities were observed in a few plots of susceptible soft red winter cultivars, while in fields trace - 20% severities were observed on flag leaves. In a few fields, fungicides had been applied where leaf rust was severe, e.g., Coker 9835. This year the drier and cooler than normal conditions during April in the Southeast slowed rust development. Therefore, fewer spores than usual were released as inoculum for areas farther north.



In late April, in Arkansas, leaf rust was increasing where rust had overwintered. Some cultivars that were severely rusted in previous years were resistant while other cultivars, e.g., Shiloh, were susceptible, which indicates a change in the race population in that area.

In early May, traces of leaf rust were found on the flag leaves of susceptible wheat cultivars in fields in the southern half of Kansas. This is similar to leaf rust development last year. Rust will continue to develop with warm weather and moisture, whether it is in the form of rain or dew.

In early May, 20-80% leaf rust severities were reported on wheat lines growing in southern California nurseries.

At Rosemount, Minnesota, viable leaf rust pustules that had overwintered were found on April 27 on leaves close to the ground in hard red winter wheat plots.

**Wheat stripe rust.** By late April, wheat stripe rust was severe from northeastern Texas and southern Oklahoma to northeastern Arkansas (Fig. 2). In fields where farmers sprayed with fungicides like Tilt, some of the rust was controlled. It has been estimated there will be a 10% loss to wheat stripe rust in northeastern Texas. As of early May, stripe rust was still increasing in northern Arkansas because there still had not been any prolonged periods of hot weather, which usually shuts down stripe rust development. This year, stripe rust was reported in a southern Georgia nursery for the first time since 1974. In late April, stripe rust was light in plots in southern Kansas and northern Alabama. In west central Mississippi plots where it was dry, wheat stripe rust was more scattered and easier to evaluate than wheat leaf rust. Wheat stripe rust this year was more widely scattered throughout the southern U.S. than it ever has been. Last year, no stripe rust was reported in south central U.S., but two years ago light amounts of wheat stripe rust were scattered from the lower Mississippi Valley north to east central Minnesota. This year stripe rust was found early because it overwintered in many areas in the southern U.S., where the winter was milder than normal. Furthermore, the spring weather has been cooler than normal, favoring stripe rust development. Preliminary data from the wheat stripe rust collections indicate a major shift in the stripe rust virulences from 1999 to 2000 in the southern U.S. It appears that there was a large source of inoculum that arrived early in the southern U.S. from Mexico.

During the first week in May, wheat stripe rust was prevalent throughout the state of Washington. Stripe rust exceeded 70% severity on susceptible winter wheat cultivars in northwestern Washington.

**Oat stem rust.** During the first week in May, oat stem rust overwintering foci were found in plots in southern Georgia and southern Alabama. The rust had killed the oats in these plots and moved outward into oat plots around the infected foci. In central Louisiana plots, oat stem rust developed to moderate levels on susceptible cultivars that were not severely infected with crown rust. Oat stem rust development is equal to last year throughout the southern U.S. During the last week in April, traces of oat stem rust were observed in plots in central Texas, and on wild oat (*Avena fatua*) in a plot in Butte, California.

**Oat crown rust.** By late April, crown rust was severe in plots of susceptible cultivars and light in commercial fields in the southern U.S. In much of this area, the drier and cooler than normal weather



during April was not conducive to rust development. These southern areas provide some inoculum for areas farther north.

In early May, pycnial infection was noted on buckthorn bushes at the St. Paul, Minnesota buckthorn nursery. In this nursery, most of the pycnia were found along the edge of the nursery rather than where the oat tial straw was located. Therefore, the first pycnia observed may be forms that infect grasses rather than oat. The pycnia development is normal for this time of the year in the nursery.

**Barley stem rust.** In late April, barley stem rust was present throughout the barley elite test at Uvalde, Texas. Stem rust rarely occurs on barley in this area.

**Barley leaf rust.** There have been no new reports of barley leaf rust since the last bulletin.

**Stripe rust on barley.** By early May, barley stripe rust had been observed in nurseries in the Sacramento and San Joaquin Valleys of California at severities of 80-100% on susceptible cultivars. In northwestern Washington, 70% severities were reported on susceptible winter barley cultivars at the late jointing stage.

**Rye leaf rust.** In late April, 60% rye leaf rust severities were reported on cultivars throughout plots in the southeastern U.S.

**Rye stem rust.** During late April, 10% rye stem rust severities were reported in a central Texas plot.

**Barberry rust.** No stem rust on barberries has been reported yet this year.

